

REMARKS

Applicants hereby add new claims 82-84 which are supported at least by the teachings of Fig. 2 and the respective teachings of the specification.

Claims 19-21, 60, 63, 65-66, 68 and 75-76 stand rejected under 35 USC 103(a) for obviousness over U.S. Patent No. 3,441,737 to Topol in view of U.S. Patent No. 3,809,243 to Teders. Claims 7 and 77 stand rejected under 35 USC 103(a) for obviousness over Topol in view of Teders and further in view of U.S. Patent No. 5,172,332 to Hungerford et al. Claim 69 stands rejected under 35 USC 103(a) for obviousness over Topol in view of Teders and further in view of U.S. Patent No. 4,390,283 to Meyer. Claims 49-52, 59, 71-74, and 78-81 stand rejected for the same reasons of rejection of claims 19-21, 60, 63, 65-69 and 75-77 because claims 49-52, 59, 71-74, and 78-81 are directed to a turbidity monitoring method implemented using the apparatus claimed in claims 19-21, 60, 63, 65-69 and 75-77.

Applicants respectfully request reconsideration of the rejections.

Referring to independent claim 19, the apparatus positively recites a plurality of sensors individually configured to monitor turbidity of subject material. The Office at page 3 of the Action states that Topol fails to teach the positively-claimed plural sensors and relies upon the teachings of Teders to cure the deficiencies of Topol.

However, the teachings of Teders relied upon by the Office only teach a single sensor configured to monitor turbidity. Accordingly, even if the teachings of the references are combined, the combination fails to teach or suggest the positively claimed limitations of the apparatus comprising *plural sensors individually configured to monitor turbidity of the subject material*. The art is void of teaching the claimed

apparatus and the Office has failed to establish a proper 103 rejection for at least this reason. Applicants respectfully request withdrawal of the 103 rejection in the next Action.

Furthermore, to the contrary of the allegation on page 4 of the Action regarding positive claim limitations reciting an intended use, Applicants submit the limitations are proper structural limitations stating that the sensors are individually configured to monitor turbidity using *particulate matter of the subject matter and the particulate matter monitored by one of the sensors is different than the particulate matter monitored by another of the sensors.* *The positively claimed arrangement of plural sensors is a structural difference which distinguishes the claim from the prior art as evidenced by the complete absence of the claimed limitations of plural sensors from the prior art.* *None of the prior art references teach the claimed limitations of the apparatus comprising plural sensors individually configured to monitor turbidity* and the claim is allowable for at least this compelling reason.

Teders also teaches use of a sensor on a tube to monitor fluid dynamically passing through the tube and there is no teaching or suggestion of repositioning of multiple configurations of the sensors of Teders in a settling tank of Topol to provide information at different levels.

Contrary to the allegation on pages 4-5 of the Action, the Office has cited no teachings that Teders is usable to monitor material in a container but to the contrary monitors material dynamically flowing through a tube per col. 3, lines 32+.

Positively-recited limitations of claim 19 are not disclosed nor suggested by the prior art references taken alone or in combination and the 103 rejection is improper for this compelling reason.

At page 3 of the Action, it is alleged that it is obvious to replace the sensor lowering mechanism of Topol with a plurality of sensors. Applicants also respectfully submit that the proposed modification to Topol amounts to a significant and entire redesign of the sensor arrangement explicitly disclosed by Topol and claim 19 is not obvious. In particular, the MPEP 2143.01 VI (8th ed., rev. 6) citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) provides that a substantial reconstruction and redesign of the elements shown in the primary reference may be sufficient to overturn an obviousness rejection. Applicants respectfully submit that the complete removal of the sensor lowering mechanism of Topol entirely changes the fundamental operation of Topol and is an impermissible modification. Applicants respectfully request withdrawal of the 103 for this additional compelling reason.

Applicants refer to MPEP 2141.02VI (8th ed., rev. 6) entitled **PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS**. This MPEP section further states that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983). Such teaching away is the antithesis of the art's suggesting that the person of ordinary skill go in the claimed direction. Essentially, teaching away from the art is a *per se* demonstration of lack of obviousness. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988). Here, Topol clearly

teaches away from the complete redesign of the Topol teachings proposed by the Office by explicitly disclosing an arrangement where a sensor is lowered into a material of interest and information provided at various depths of the sensor in the material during the lowering. The explicit, complete and thorough disclosure of the sensor lowering arrangement of Topol teaches away from the substantial redesign of the arrangement of Topol to accommodate the Teders teachings with no benefit or improvement.

In addition to the significant non-obvious modification to the Topol teachings proposed by the Office, Applicants respectfully submit that the Office has failed to provide an adequate rationale for combining the reference teachings. The Supreme Court has stated that some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness is needed. *KSR Int'l v. Teleflex, Inc.*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007). MPEP 2142 (8th ed., rev. 6) further provides that rejections on obviousness *cannot be sustained with mere conclusory statements*; instead there must be some articulated reasoning with some rational underpinning to support a legal conclusion of obviousness and which must be factually supported per MPEP 2142.

At pages 3-4 of the Action, the Office states that the complete redesign of Topol including removal of the sensor lowering mechanism would improve the accuracy in measurement or monitoring of turbidity. The Office has provided no support for this allegation apart from the bald cursory arguments. To the contrary of the position of the Office, Teders is directed towards *measuring turbidity in a dialysis application where the material dynamically passes through a tube* per col. 3, lines 32-35. The Office has provided no support that the modification of replacing the sensor lowering mechanism in

the settling tank of Topol by the use of a sensor configured for use in monitoring fluid passing through a tube of Teders would provide any benefit or improvement. Furthermore, the Office has provided no support for the bald allegation that the sensor of Teders for measuring turbidity in dynamically flowing material obtains a more accurate representation of turbidity of material in a container. Applicants have failed to uncover any teachings in Teders of monitoring material in a container let alone any teachings or evidence in the art that use of the sensor of Teders to monitor material in a container would provide any improvement over the design of Topol. Applicants respectfully submit that the Office has failed to provide a proper articulated reasoning with a rational underpinning as required for a proper 103 rejection and the 103 rejection is in error.

Furthermore, according to MPEP 2143.02 (8th ed., rev. 6), a proper rationale to support a 103 rejection is that one of ordinary skill in the art could have combined the elements as claimed by known methods with no change in their respective functions. *KSR International Co. v. Teleflex*, 82 USPQ2d 1385, 1395 (2007) and MPEP 2143.02 (8th ed., rev. 6). In the instant rejection, the arrangement of Topol is completely revised and changed to remove the sensor lowering mechanism which illustrates the improper rationale and erroneous nature of the 103 rejection.

Applicants respectfully request withdrawal of the 103 rejection for at least the above-mentioned numerous reasons.

The claims which depend from claim 19 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, referring to claim 20, the prior art references taken alone or in combination fail to teach or suggest the claimed limitations of *sensors provided at different positions relative to the container to monitor the turbidity of the subject material at plural vertical positions of the container*. Topol teaches an explicit and complete arrangement of a single sensor and Teders teaches a single sensor which is used in arrangements where fluid dynamically flows through a tube. Limitations of claim 20 are not disclosed nor suggested by the prior art and claim 20 is allowable.

Referring to claim 60, the arrangement of Teders teaches *monitoring of dynamically flowing material through a tube and the prior art of Topol and Teders fails to teach the plurality of sensors individually configured to monitor the turbidity of the subject material in the substantially static state* as explicitly claimed. Claim 60 is allowable for at least this reason.

Referring to claim 63, Topol is directed to sewage applications and Teders is directed to dialysis applications. The prior art references taken alone or in combination fail to teach or suggest *a process chamber configured to receive and process a semiconductor workpiece using the subject material* in combination with the other limitations as explicitly claimed. Claim 63 is allowable.

Referring to independent claim 49, the method recites *providing subject material in a substantially static condition within the container and monitoring the turbidity of the subject at a predefined vertical position within the container without displacing the subject material*. Teders is directed to arrangements for monitoring fluid dynamically flowing through a tube. Topol clearly teaches immersing a sensor into a tank to measure turbidity which displaces material. Positively-recited limitations of claim 49 are

not disclosed nor suggested even if the references are combined and the 103 rejection is in error for at least this reason.

Topol teaches away from a modification per the teachings of Teders *by explicitly disclosing immersing the sensor in the tank and displacing material* and the modification proposed by the Office is contrary to the explicit teachings of the primary reference being modified. The 103 rejection is in error for this additional reason.

Furthermore, the modification proposed by the Office is a *significant redesign of the arrangement of Topol* where material in the tank is displaced by the immersion of the sensor and the 103 rejection is erroneous for this additional reason.

Finally, the Office has failed to present an articulated reason with a rational underpinning in support of the combination of Teders with Topol and the 103 rejection is improper for this additional reason.

Applicants respectfully request allowance of claim 49 for at least the above-mentioned compelling reasons.

The claims which depend from claim 49 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, referring to claim 50, Topol and Teders each teach arrangements which only *use a single sensor*. The single sensor teachings of each of the prior art references even if combined are void of disclosing or suggesting the positively-claimed limitations of *monitoring the subject material at a predefined vertical position and simultaneously monitoring the turbidity of the subject material at another predefined*

vertical position at the same time as the monitoring at the predefined vertical position.

Positively-recited limitations are not disclosed by the art and claim 50 is allowable.

Referring to claim 51, Topol discloses use of a light bulb and Teders discloses use of a lamp which fail to teach or suggest emitting electromagnetic energy which is not visible to humans as explicitly claimed. Positively-recited limitations are not disclosed by the art and claim 51 is allowable.

Referring to claim 59, the arrangement of Teders teaches *monitoring of dynamically flowing material through a tube and the prior art fails to teach monitoring of turbidity of subject material provided in a substantially static condition* in combination with the limitations of *monitoring without displacing the subject material*. The claimed combination of limitations is not disclosed nor suggested by the prior art and claim 59 is allowable for at least this reason.

Referring to independent claim 74, the prior art references of Topol and Teders are void of teaching any rotation let alone the specifically claimed rotating the container comprising the subject material about an axis during the monitoring of turbidity of the subject material as explicitly claimed. Claim 74 is allowable for this reason. Furthermore, the combination of Teders and Topol is inappropriate in consideration of the above-recited authority and Applicants respectfully request withdrawal of the 103 rejection for the above-mentioned compelling reasons.


Applicants respectfully request allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is

available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

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